

CLAIMS

- 1 1. A vacuum pump non-return valve comprising a valve body that defines a
2 through-passage having an inlet end and an outlet end, an annular
3 elastomeric insert located on the valve body intermediate the inlet and outlet
4 ends and defining a valve seat, and a ball arranged to seat against the valve
5 seat to prevent passage of gaseous fluids from the outlet end to the inlet end
6 and being displaceable, in use, from the valve seat by pressurised gaseous
7 fluid in the inlet end to permit passage of the gaseous fluid from the inlet end
8 to the outlet end.
- 1 2. A vacuum pump non-return valve comprising a valve body that defines a
2 through-passage having an inlet end and an outlet end, a valve seat disposed
3 intermediate said inlet and outlet ends, and a ball, wherein said valve seat is
4 defined by an insert made of an elastomeric material, the ball being arranged
5 to seat against said valve seat to prevent passage of gaseous fluids from said
6 outlet end to said inlet end and being displaceable, in use, from said valve
7 seat by pressurised gaseous fluid in said inlet end to permit passage of said
8 gaseous fluid from said inlet end to said outlet end.
- 1 3. A valve as claimed in claim 1 wherein said ball is made of a material selected
2 from the group comprising metal, polymer and ceramic.
- 1 4. A valve as claimed in claim 3 wherein said ball is coated with a non-stick
2 material to prevent sticking to said valve seat.
- 1 5. A valve as claimed in claim 1 wherein said insert is an O-ring.
- 1 6. A valve as claimed in claim 1 wherein said insert is made of a material
2 selected from the group comprising fluoroelastomer and perfluoroelastomer.

- 1 7. A valve as claimed in claim 1 wherein said valve body is a casting.
- 1 8. A vacuum pump non-return valve comprising a cast body part having an inlet,
2 an outlet and a location for receiving an insert, an insert made of an
3 elastomeric material located at the location and a ball, the insert defining a
4 valve seat, the ball being arranged to seat on the valve seat to prevent
5 passage of gaseous fluids from the outlet to the inlet and being displaceable,
6 in use, from the valve seat by gas pressure acting on an upstream facing side
7 thereof to permit the gaseous fluid to pass from the inlet to the outlet.
- 1 9. A vacuum pump comprising a non-return valve in a flowpath for gaseous
2 fluids exhausted from the pump, the valve comprising a valve seat insert and
3 a ball, characterised in that said valve seat insert is made of an elastomeric
4 material and is positioned relative to said flowpath such that when, in use,
5 said ball is seated on the valve seat insert, the flow of gaseous fluids in said
6 flowpath is prevented and when there is a predetermined gas pressure in said
7 flowpath upstream of the ball, the ball is moved from said valve seat insert by
8 gas pressure so that the gaseous fluid can flow in said flowpath downstream
9 of the ball.
- 1 10. A pump according to Claim 9 wherein the insert comprises an annular
2 elastomeric insert located intermediate an inlet end and an outlet end of the
3 flowpath.
- 1 11. A method of preventing backflow of exhaust gas to a vacuum pump
2 comprising providing a valve seat comprising of an insert made of an
3 elastomeric material in a flowpath for said exhaust gas, and providing a ball
4 on said valve seat to prevent passage of said exhaust gas, the ball being
5 arranged such that it seats against said valve seat under the influence of
6 gravity and is displaceable against gravity by gas pressure upstream of said
7 ball.